

IN THE CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A system, comprising:

a processor;

a host controller coupled to the processor; and

a device coupled to the host controller;

wherein the device is electrically disconnected from the host controller if the device is not in an active state; and

wherein the device being electrically disconnected from the host controller causes an appearance to the host controller that the device is not coupled to the host controller;
and

wherein a sideband signal is used to signal the device to electrically reconnect after the device has been electrically disconnected.

2. (Original) The system of claim 1, wherein the device is a card reader and the active state comprises a memory card in the card reader.

3. (Original) The system of claim 1, wherein the device is a hub and the active state comprises a second device attached to the hub.

4. (Original) The system of claim 1, wherein the device is not in an active state if the device has not been used in a second specified amount of time.

5. (Original) The system of claim 1, wherein if the device is not in an active state, the device is electrically disconnected after a wait period, wherein if the device becomes active during the wait period, the device is not electrically disconnected.

6. (Original) The system of claim 1, wherein when the device is electrically disconnected from the host controller, the device does not cause bus activity.
7. (Original) The system of claim 1, wherein the device is a card reader, and if a memory card is inserted into the card reader and the card reader has been previously electrically disconnected, the electrical disconnect from the host controller is discontinued.
8. (Original) The system of claim 1, wherein if the processor is in a low power state, the processor exits the low power state if an electrical disconnect is discontinued.
9. (Previously Presented) The system of claim 1, wherein the device is a card reader and the card reader is permanently coupled to a portable computer.
10. (Cancelled)
11. (Original) The system of claim 1, wherein the host controller provides a peripheral bus interface for the device.
12. (Original) The system of claim 1, wherein electrically disconnecting the device comprises electrically removing a pull up resistor from a D+ line.
13. (Original) The system of claim 1, wherein electrically disconnecting the device comprises tri-stating a D+ line and a D- line.
14. (Currently Amended) A method, comprising:
 - detecting whether a device coupled to a host controller is in an active state;
 - if the device is not in an active state, electrically disconnecting the device from a host controller, wherein electrically disconnecting the device from the host controller causes an appearance to the host controller that the device is not coupled to the host controller;~~and~~

if the device is in an active state, maintaining an electrical connection between the device and the host controller; and

electrically reconnecting the device using a sideband signal after the device has been electrically disconnected.

15. (Original) The method of claim 14, wherein the device is a card reader, and the active state comprises a memory card inserted in the card reader.

16. (Original) The method of claim 14, wherein the device is a hub, and the active state comprises a second device coupled to the hub.

17. (Currently Amended) The method of claim 16, wherein the second device is coupled to the hub and a sideband signal from a computer signals the hub to electrically disconnect ~~and wherein a sideband signal from the computer signals the hub to electrically reconnect at a later time.~~

18. (Original) The method of claim 16, wherein the second device is coupled to the hub and a sideband signal from a computer signals the hub to enter a reduced functionality state and wherein a sideband signal from the computer signals the hub to exit the reduced functionality state at a later time.

19. (Original) The method of claim 14, wherein the device is not in an active state if the device has not been used in a second specified amount of time.

20. (Original) The method of claim 14, wherein if the device is not in an active state, the device is electrically disconnected after a wait period, wherein if the device becomes active during the wait period, the device is not electrically disconnected.

21. (Original) The method of claim 14, wherein if no devices are coupled to the host controller the host controller does not create bus activity.

22. (Currently Amended) The method of claim 14, wherein the device is a card reader, and wherein said electrically reconnecting is performed if a memory card is inserted into the card reader after the card reader has been electrically disconnected, ~~the electrical disconnect is discontinued.~~

23. (Cancelled)

24. (Original) The method of claim 14, wherein the device is a card reader and wherein the card reader is not in an active state if the card reader has not been accessed in a second specified amount of time.

25. (Currently Amended) The method of claim 24, wherein said electrically reconnecting is performed ~~a sideband signal is used to signal the card reader to electrically reconnect~~ when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.

26. (Original) The method of claim 14, wherein the host controller provides a peripheral bus interface for the device.

27. (Original) The method of claim 14, wherein electrically disconnecting the device comprises electrically removing a pull up resistor from a D+ line.

28. (Original) The method of claim 14, wherein electrically disconnecting the device comprises tri-stating a D+ line and a D- line.

29. (Currently Amended) A system, comprising:

- a processor;
- a host controller coupled to the processor;
- a device detect logic;
- a hub electrically coupled to the host controller and device detect logic;
- an auto detach logic coupled to the hub; and

wherein the auto detach logic initiates an electrical disconnect of the hub from the host controller if the device detect logic does not detect a device on the hub, and wherein the hub being electrically disconnected from the host controller causes an appearance to the host controller that the device is not coupled to the host controller; and

wherein a sideband signal is used to signal the device to electrically reconnect after the device has been electrically disconnected.

30. (Original) The system of claim 29, wherein when the hub is electrically disconnected, the hub does not create bus activity until a device is coupled to the hub.

31. (Currently Amended) The system of claim 29, wherein if a device is coupled to the hub, the auto detach electrically reconnects ~~logic discontinues the electrical disconnect of~~ the hub ~~from~~ to the host controller.

32. (Original) The system of claim 29, wherein if the processor is in a low power state, the processor exits the low power state if the electrical disconnect is discontinued.

33. (Previously Presented) The system of claim 29, wherein the processor is in a portable computer.

34. (Previously Presented) The system of claim 29, wherein the hub is permanently coupled to a portable computer.

35. (Original) The system of claim 29, wherein the device comprises a keyboard, a mouse, a speaker, a microphone, a printer, a camera, a scanner, or a touchscreen.

36. (Original) The system of claim 29, wherein the device is a USB device and is coupled to the hub by plugging the device into a USB connection.

37. (Original) The system of claim 29, wherein the electrical disconnect comprises tristating the full speed (FS) and high speed (HS) transceivers.

38. (Original) The system of claim 29, wherein the electrical disconnect is enabled by a configuration bit in an Electrically Erasable Programmable Read-Only Memory (EEPROM).

39. (Original) The system of claim 29, wherein if a device is not detected on the hub, the hub is electrically disconnected after a wait period, wherein if a device is attached to the hub during the wait period, the hub is not electrically disconnected.

40. (Currently Amended) A method, comprising:

detecting whether a device is coupled to a hub;

if a device is not coupled to the hub, electrically disconnecting the hub from a host controller, wherein electrically disconnecting the hub from the host controller causes an appearance to the host controller that the device is not coupled to the host controller; and

if a device is coupled to the hub, maintaining a connection between the hub and the host controller; and

electrically reconnecting the hub using a sideband signal after the hub has been electrically disconnected.

41. (Currently Amended) The method of claim 40, wherein said electrically reconnecting is performed ~~wherein if a device is reconnected to the hub, the electrical disconnect is not maintained;~~ and

wherein if the processor is in a low power state, the processor awakes from the low power state.

42. (Original) The method of claim 41, wherein the device coupled to the hub comprises a keyboard, a mouse, a speaker, a microphone, a printer, a camera, a scanner, or a touchscreen.

43. (Original) The method of claim 40, wherein electrical disconnecting comprises tristating FS and HS transceivers.

44. (Original) The method of claim 40, wherein electrical disconnect is enabled by a configuration bit in an EEPROM.

45. (Cancelled)

46. (Original) The method of claim 40, wherein if a device is not coupled to the hub, the hub is electrically disconnected after a wait period, wherein if a device is coupled to the hub during the wait period, the hub is not electrically disconnected.

47. (Currently Amended) A computer accessible memory medium that stores program instructions, wherein the program instructions are executable by a processor to:

detect whether a device coupled to a host controller is in an active state;

if the device is not in an active state, electrically disconnect the device from a host controller, wherein electrically disconnecting the device from the host controller causes an appearance to the host controller that a device is not coupled to the host controller; and

if the device is in an active state, maintain an electrical connection between the device and the host controller; and

electrically reconnect the device using a sideband signal after the device has been electrically disconnected.

48. (Previously Presented) The memory medium of claim 47, wherein the device is a card reader, and the active state comprises a memory card inserted in the card reader.

49. (Previously Presented) The memory medium of claim 47, wherein the device is a hub, and the active state comprises a second device coupled to the hub.

50. (Previously Presented) The memory medium of claim 47, wherein the device is not in an active state if the device has not been used in a second specified amount of time.

51. (Previously Presented) The memory medium of claim 47, wherein if the device is not in an active state, the device is electrically disconnected after a wait period, wherein if the device becomes active during the wait period, the device is not electrically disconnected.

52. (Previously Presented) The memory medium of claim 47, wherein if no devices are coupled to the host controller the host controller does not create bus activity.

53. (Currently Amended) The memory medium of claim 47, wherein the device is a card reader, and wherein said electrically reconnecting is performed if a memory card is inserted into the card reader after the card reader has been electrically disconnected,~~the electrical disconnect is discontinued.~~

54. (Cancelled)

55. (Previously Presented) The memory medium of claim 47, wherein the device is a card reader and wherein the card reader is not in an active state if the card reader has not been accessed in a second specified amount of time.

56. (Currently Amended) The memory medium of claim 47, wherein the device is a card reader, and wherein said electrically reconnecting is performed ~~a sideband signal is used to signal the card reader to electrically reconnect~~ when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.

57. (Previously Presented) The memory medium of claim 47, wherein the host controller provides a peripheral bus interface for the device.

58. (Previously Presented) The memory medium of claim 47, wherein electrically disconnecting the device comprises electrically removing a pull up resistor from a D+ line.

59. (Previously Presented) The memory medium of claim 47, wherein electrically disconnecting the device comprises tri-stating a D+ line and a D- line.

60. (Previously Presented) The system of claim 1, wherein the device being electrically disconnected from the host controller allows the processor to enter a low power state or remain in a low power state.

61. (Previously Presented) A system, comprising:

a processor;

a host controller coupled to the processor; and

a device coupled to the host controller;

wherein the device is electrically disconnected from the host controller if the device is not in an active state; and

wherein a sideband signal is used to signal the device to electrically reconnect after the device has been electrically disconnected.

62. (Previously Presented) The system of claim 61, wherein the device being electrically disconnected from the host controller makes the device appear to the host controller that the device is not coupled to the host controller.

63. (Previously Presented) The system of claim 61, wherein the device is a card reader and the active state comprises a memory card in the card reader.

64. (Previously Presented) The system of claim 61, wherein the device is not in an active state if the device has not been used in a specified amount of time.

65. (Previously Presented) The system of claim 61, wherein the device is a card reader, and if a memory card is inserted into the card reader and the card reader has been previously electrically disconnected, the electrical disconnect from the host controller is discontinued.

66. (Currently Amended) A system, comprising:
a processor;
a host controller coupled to the processor; and
a card reader coupled to the host controller;
wherein when a memory card is removed from the card reader, the card reader is electrically disconnected from the host controller; and
wherein the card reader being electrically disconnected from the host controller causes an appearance to the host controller that the card reader is not coupled to the host controller;
wherein a sideband signal is used to signal the card reader to electrically reconnect after the card reader has been electrically disconnected.

67. (Previously Presented) The system of claim 66, wherein if a memory card is inserted into the card reader and the card reader has been previously electrically disconnected, the electrical disconnect from the host controller is discontinued.

68. (Previously Presented) The system of claim 66, wherein the card reader being electrically disconnected from the host controller allows the processor to enter a low power state or remain in a low power state.

69. (Previously Presented) The system of claim 66, wherein the card reader is not in an active state if the card reader has not been used in a specified amount of time.

70. (Previously Presented) The system of claim 66, wherein if the card reader is not in an active state, the card reader is electrically disconnected after a wait period, wherein if the card reader becomes active during the wait period, the card reader is not electrically disconnected.

71. (Previously Presented) The system of claim 66, wherein when the card reader is electrically disconnected from the host controller, the card reader does not cause bus activity.

72. (Previously Presented) The system of claim 66, wherein the card reader is permanently coupled to a portable computer.

73. (Cancelled)

74. (Currently Amended) A method, comprising:

detecting whether a card reader coupled to a host controller is in an active state;

if the card reader does not have a memory card inserted in the card reader, electrically disconnecting the card reader from a host controller, wherein electrically disconnecting the card reader from the host controller causes an appearance to the host controller that the card reader is not coupled to the host controller; and

if the card reader is in an active state, maintaining an electrical connection between the card reader and the host controller;

wherein a sideband signal is used to signal the card reader to electrically reconnect when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.

75. (Previously Presented) The method of claim 74, wherein the card reader is not in an active state if the card reader has not been used in a specified amount of time.

76. (Previously Presented) The method of claim 74, wherein if the card reader is not in an active state, the card reader is electrically disconnected after a wait period, wherein if the card reader becomes active during the wait period, the card reader is not electrically disconnected.

77. (Previously Presented) The method of claim 74, wherein if no card reader is coupled to the host controller the host controller does not create bus activity.

78. (Previously Presented) The method of claim 74, wherein if a memory card is inserted into the card reader after the card reader has been electrically disconnected, the electrical disconnect is discontinued.

79. (Cancelled)

80. (Currently Amended) A computer accessible memory medium that stores program instructions, wherein the program instructions are executable by a processor to perform:

detecting whether a card reader coupled to a host controller is in an active state;

if the card reader does not have a memory card inserted in the card reader, electrically disconnecting the device from a host controller, wherein electrically disconnecting the card reader from the host controller causes an appearance to the host controller that the card reader is not coupled to the host controller; and

if the card reader is in an active state, maintaining an electrical connection between the card reader and the host controller;

wherein a sideband signal is used to signal the card reader to electrically reconnect when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.

81. (Previously Presented) The memory medium of claim 80, wherein the card reader is not in an active state if the card reader has not been used in a specified amount of time.

82. (Previously Presented) The memory medium of claim 80, wherein if the card reader is not in an active state, the card reader is electrically disconnected after a wait period, wherein if the card reader becomes active during the wait period, the card reader is not electrically disconnected.

83. (Previously Presented) The memory medium of claim 80, wherein if no card reader is coupled to the host controller the host controller does not create bus activity.

84. (Previously Presented) The memory medium of claim 80, wherein if a memory card is inserted into the card reader after the card reader has been electrically disconnected, the electrical disconnect is discontinued.

85. (Cancelled)

86. (New) A method, comprising:

- detecting whether a device coupled to a host controller is in an active state, wherein the device is a hub, and the active state comprises a second device coupled to the hub;

- if the device is not in an active state, electrically disconnecting the device from a host controller, wherein electrically disconnecting the device from the host controller causes an appearance to the host controller that the device is not coupled to the host controller; and

- if the device is in an active state, maintaining an electrical connection between the device and the host controller;

- wherein the second device is coupled to the hub and a sideband signal from a computer signals the hub to electrically disconnect and wherein a sideband signal from the computer signals the hub to electrically reconnect at a later time.

87. (New) A method, comprising:

- detecting whether a device coupled to a host controller is in an active state, wherein the device is a hub, and the active state comprises a second device coupled to the hub;

- if the device is not in an active state, electrically disconnecting the device from a host controller, wherein electrically disconnecting the device from the host controller causes an appearance to the host controller that the device is not coupled to the host controller; and

- if the device is in an active state, maintaining an electrical connection between the device and the host controller;

wherein the second device is coupled to the hub and a sideband signal from a computer signals the hub to enter a reduced functionality state and wherein a sideband signal from the computer signals the hub to exit the reduced functionality state at a later time.

88. (New) A method, comprising:

detecting whether a device coupled to a host controller is in an active state, wherein the device is a card reader, and wherein the card reader is not in an active state if the card reader has not been accessed in a second specified amount of time;

if the device is not in an active state, electrically disconnecting the device from a host controller, wherein electrically disconnecting the device from the host controller causes an appearance to the host controller that the device is not coupled to the host controller; and

if the device is in an active state, maintaining an electrical connection between the device and the host controller;

electrically reconnecting the card reader using a sideband signal when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.

89. (New) A computer accessible memory medium that stores program instructions, wherein the program instructions are executable by a processor to:

detect whether a card reader coupled to a host controller is in an active state;

if the card reader is not in an active state, electrically disconnect the card reader from a host controller, wherein electrically disconnecting the card reader from the host controller causes an appearance to the host controller that a card reader is not coupled to the host controller; and

if the card reader is in an active state, maintain an electrical connection between the device and the host controller;

wherein a sideband signal is used to signal the card reader to electrically reconnect when an attempt is made to access a card after the card reader has been electrically disconnected with a card inserted into the card reader.